

Figure 1
 Scheme For The Synthesis Of N-Methyl Piperazine

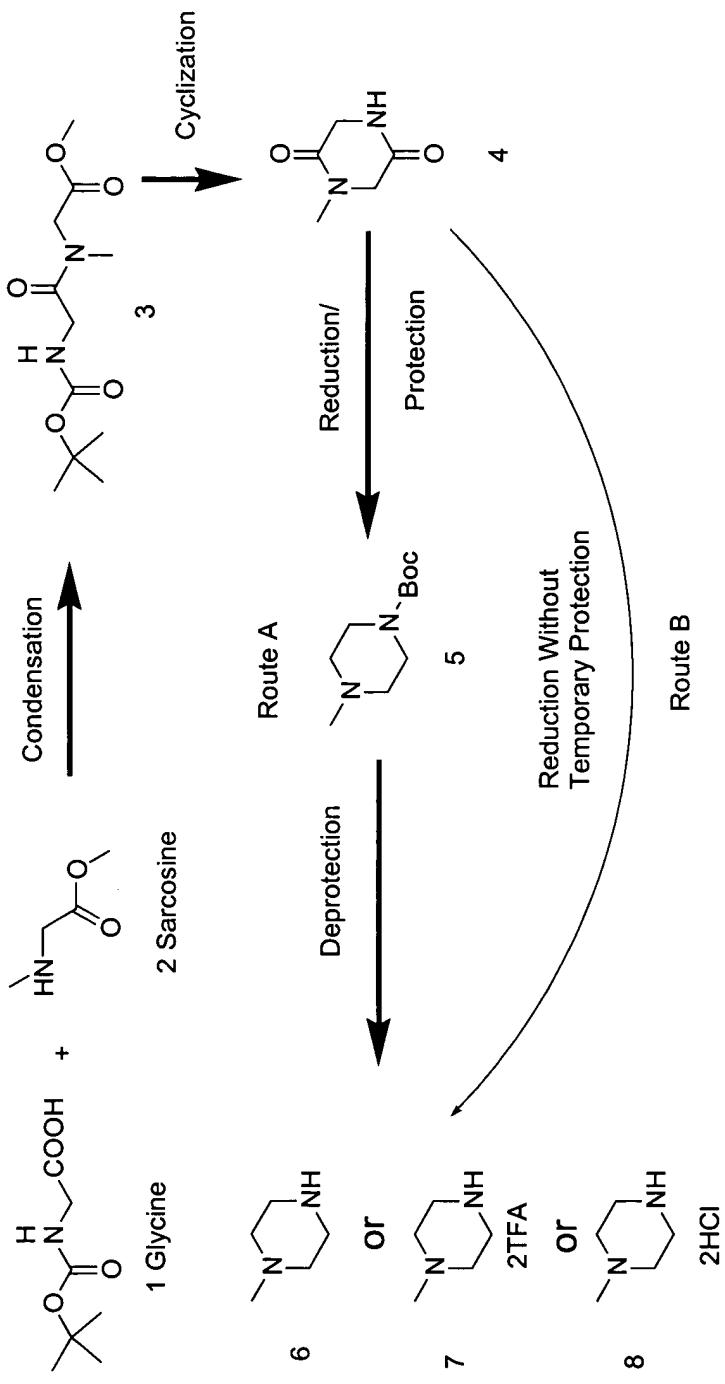


Figure 2A

Scheme A For The Synthesis Of N-Methyl Piperazine Acetic Acids

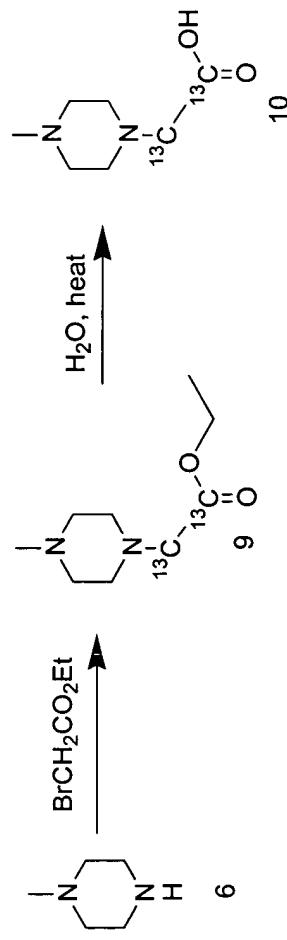


Figure 2B

Scheme B For The Synthesis Of N-Methyl Piperazine Acetic Acids

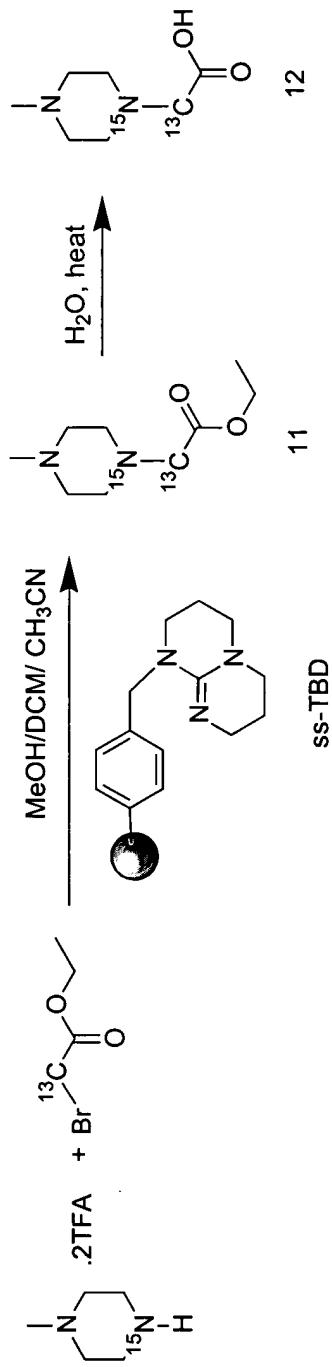


Figure 2C

Scheme C For The Synthesis Of N-Methyl Piperazine Acetic Acids

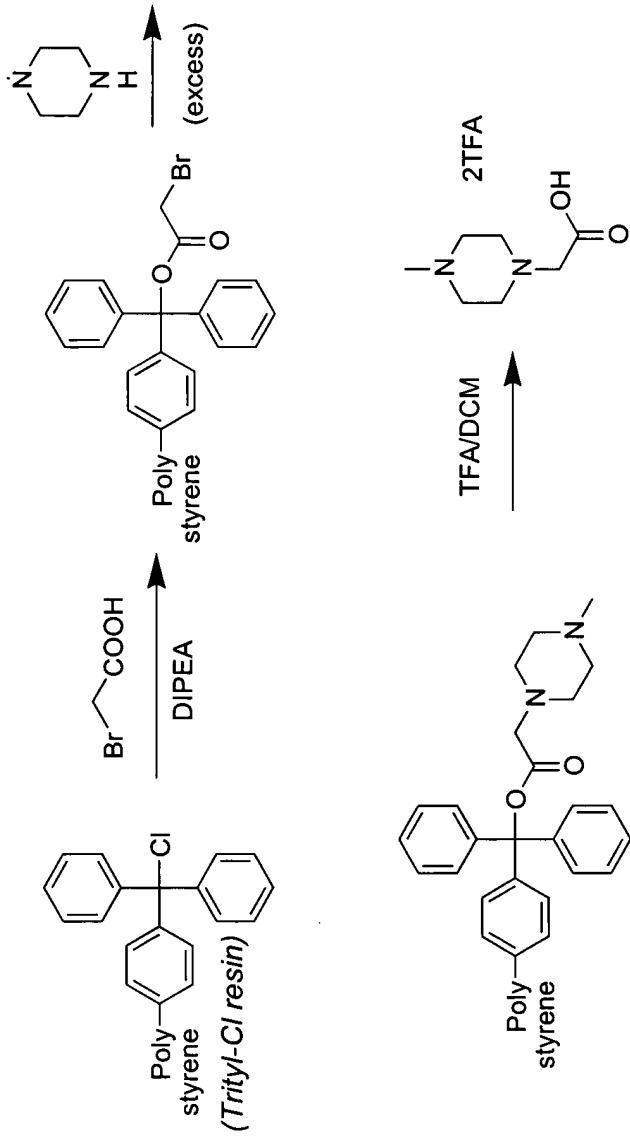


Figure 3A

Scheme A For The Synthesis Of ^{18}O Labeled N-Methyl Piperazine Acetic Acids

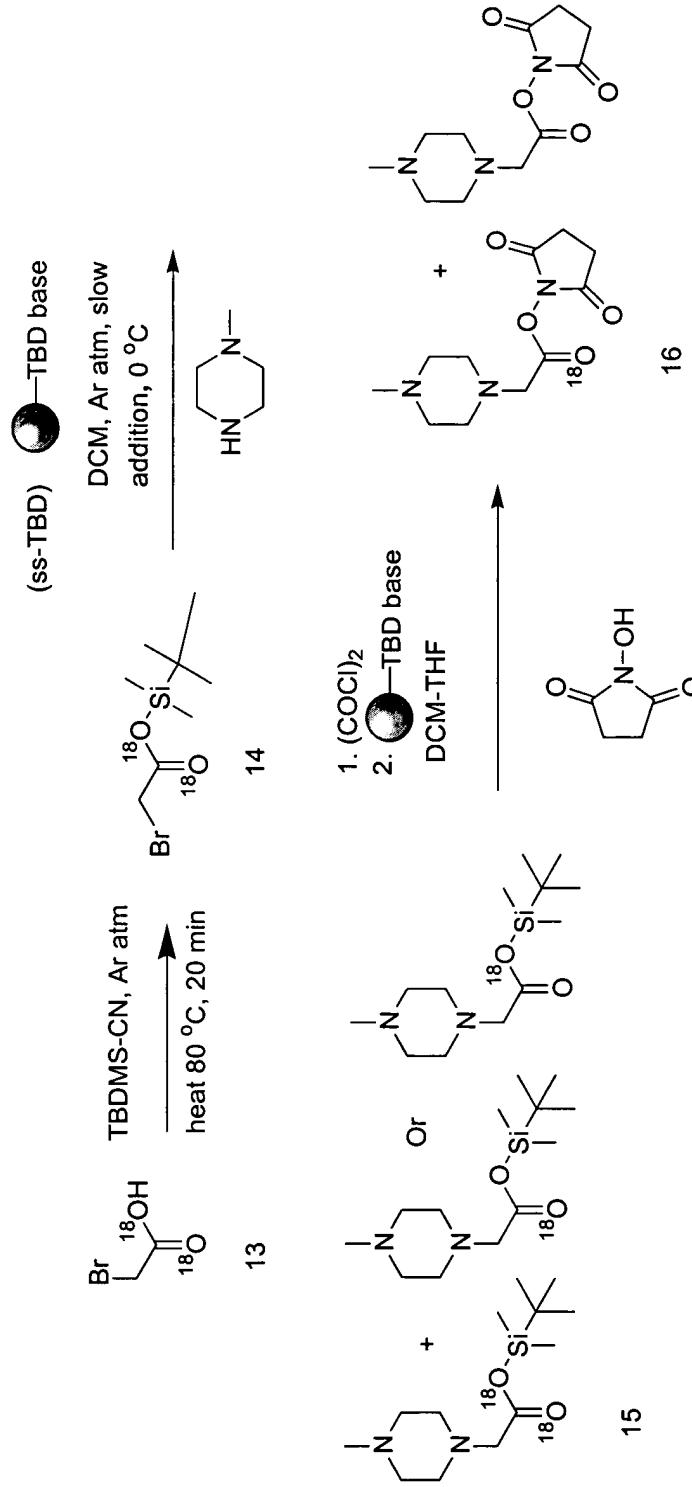


Figure 3B

Scheme B For The Synthesis Of ^{18}O Labeled N-Methyl Piperazine Acetic Acids

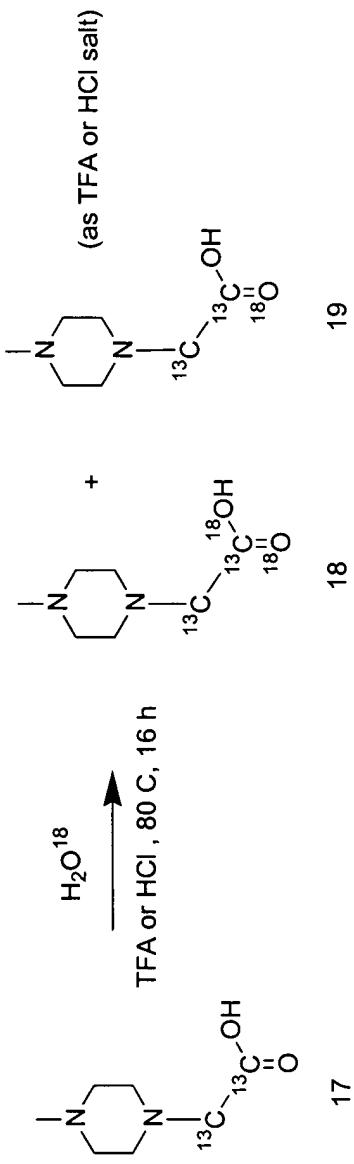


Figure 4A

Scheme A For The Synthesis Of Various Active Esters Of N-Methyl Piperazine
Via Imidazolidine Formation

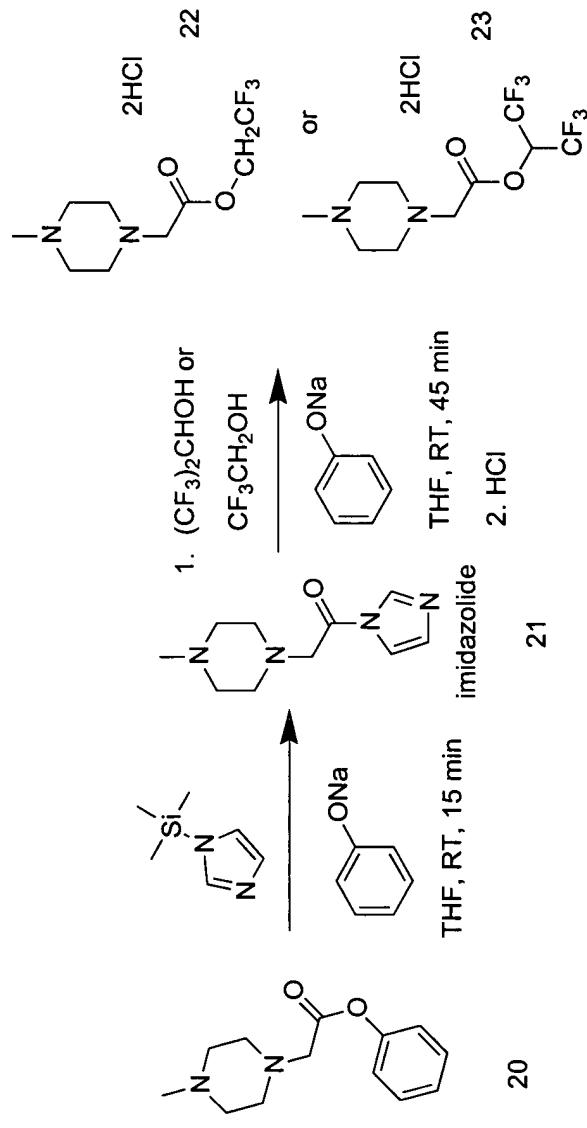


Figure 4B

Scheme B For The Synthesis Of Various Active Esters Of N-Methyl Piperazine
Via Oxallyl Chloride

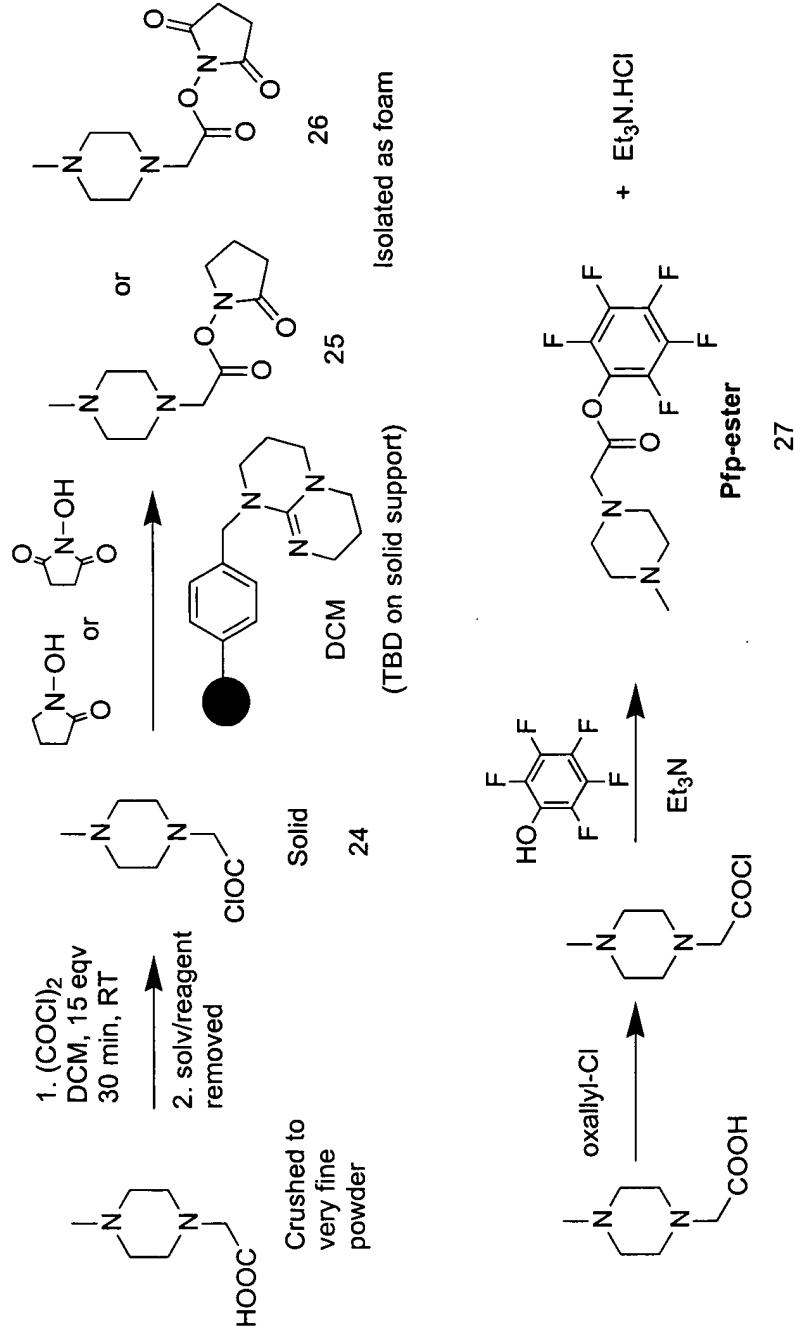


Figure 4C

Scheme C For The Synthesis Of Various Active Esters Of N-Methyl Piperazine
Via Trifluoroacetate Ester

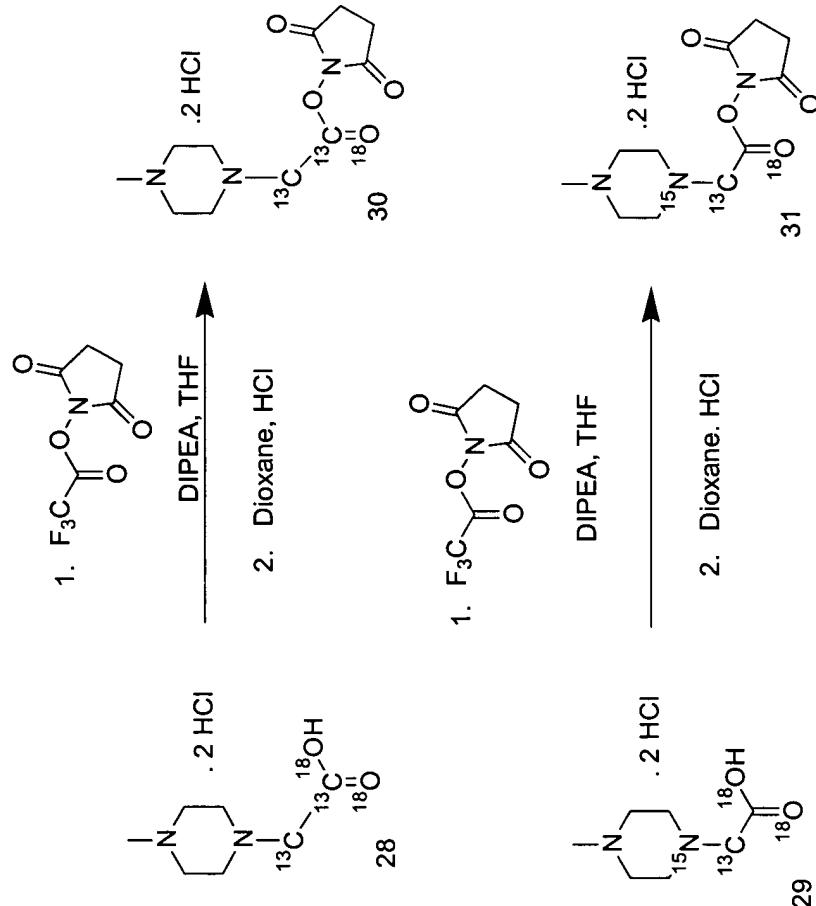


Figure 4D
 Scheme For The Synthesis Of Various Active Esters Of N-Methyl Piperazine
 Via Trifluoroacetate Esters

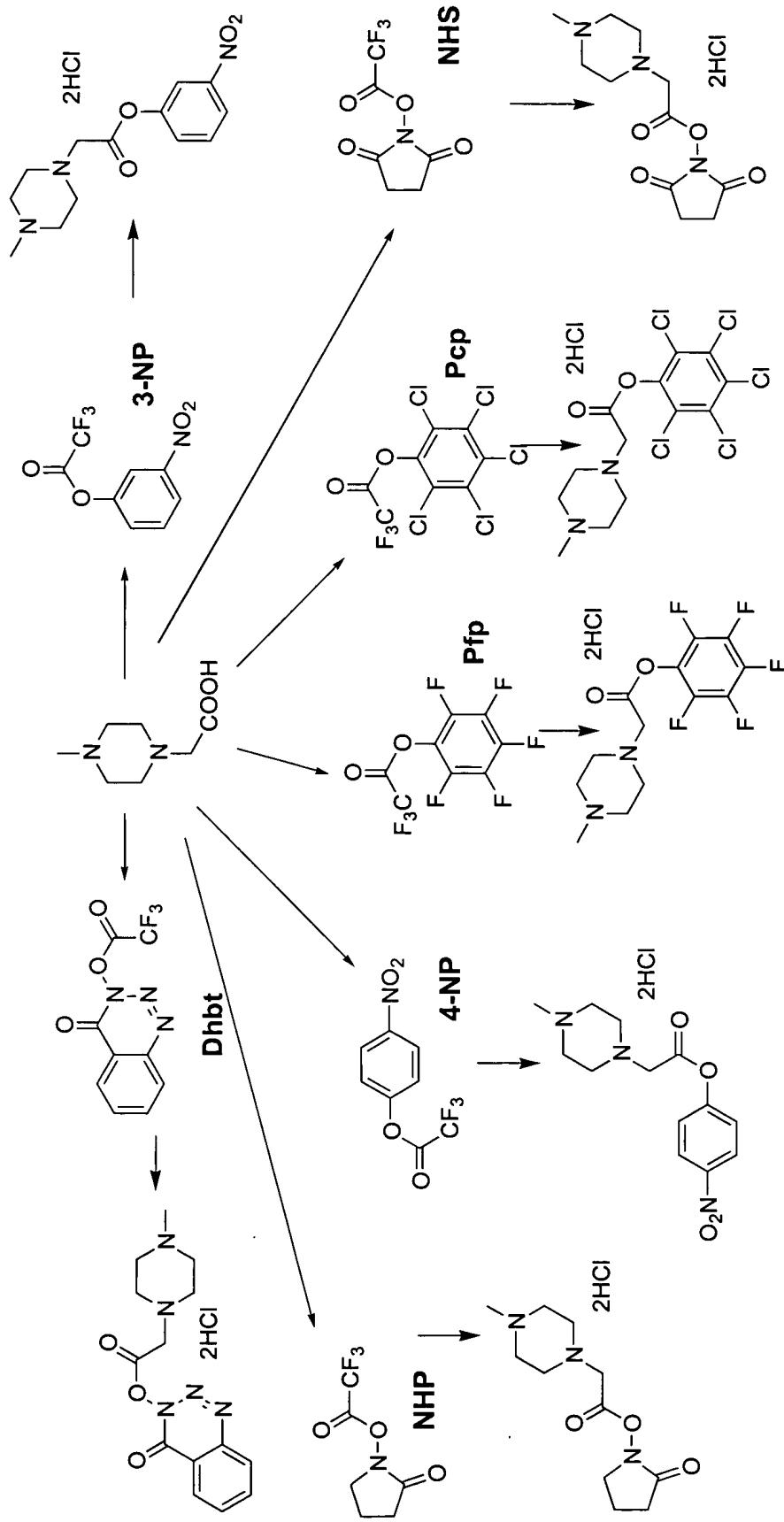


Figure 5A
Isotopic Pathway For Prepared N-Methyl Piperazine Acetic Acids

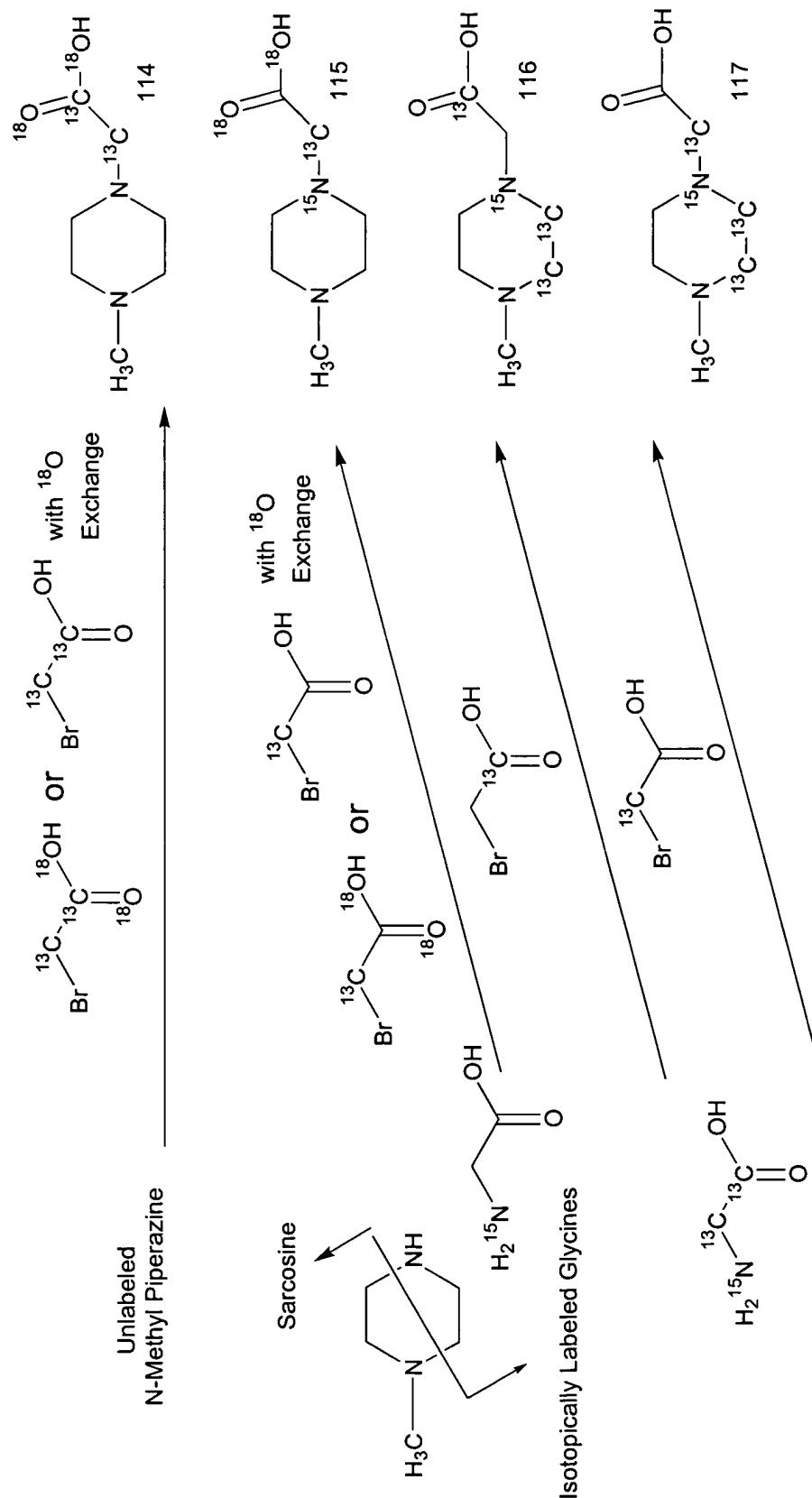


Figure 5B
Fragmentation of the Isobaric Label Set

<p>Reagent mass 259</p>	<p>Labeled Peptide *O</p>	<p>Signature Ion 114</p>
<p>Reagent mass 259</p>	<p>Labeled Peptide *O</p>	<p>Signature Ion 115</p>
<p>Reagent mass 259</p>	<p>Labeled Peptide *O</p>	<p>Signature Ion 116</p>
<p>Reagent mass 259</p>	<p>Labeled Peptide *O</p>	<p>Signature Ion 117</p>

NHS = N-hydroxysuccinimide
Pep = peptide

Σ = Fragmentation Point

N* = ¹⁵N; C* = ¹³C; O* = ¹⁸O

Stars indicate "heavy" isotopes

Figure 5C
Possible Fragment Ion Structures

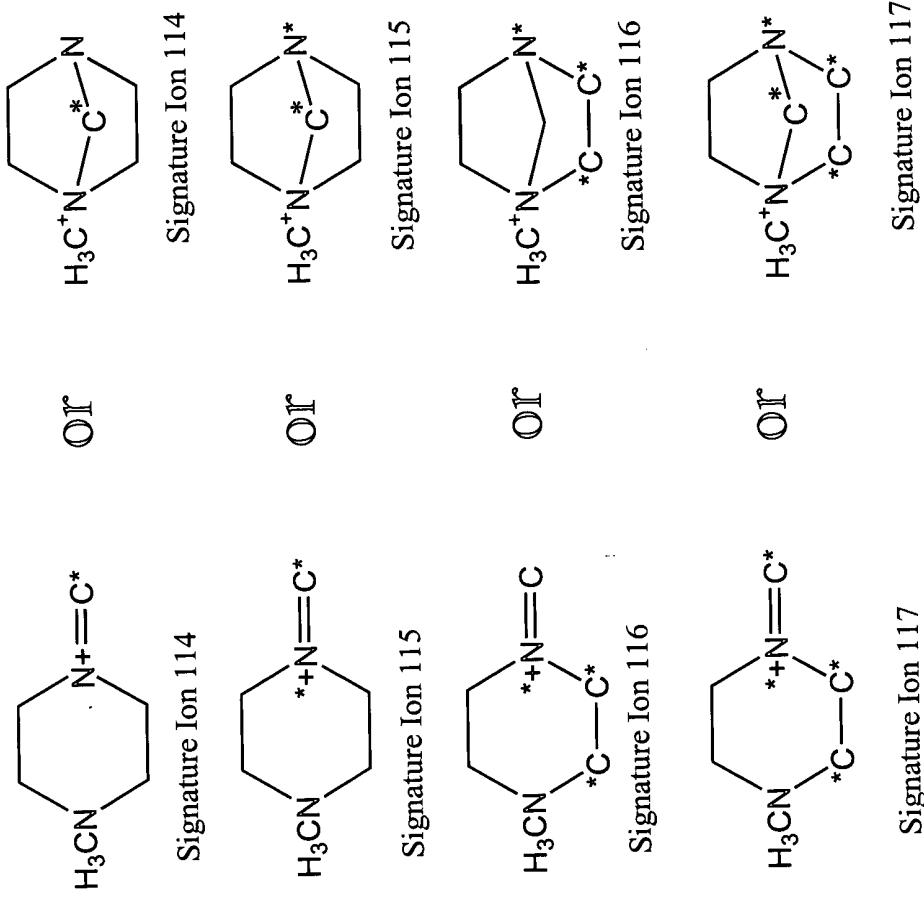


Figure 6

General Fragmentation Properties Of The Set Of Isobaric Labeling Reagents

